THE VETERINARY RECORD

A Weekly Journal for the Profession.

EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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REGULATIONS FOR GLANDERS IN LONDON.

The confusion which may result from permissive legislation is well shown by the results of the Glanders order of 1892.

That Order annulled the Order of 1886 and gave power to Local Authorities to slaughter only on payment of compensation. It also gave very great powers limiting the movement of diseased, suspected, or in-contact animals. These when coupled with the compulsory slaughter and compensation were of course necessary and just, enabling the Local Authority to protect its expenditure and ensuring the ultimate success of its efforts.

For some reason the London County Council declined to adopt the order, and consequently no direct law is now in force in London requiring the slaughter of glandered horses. This action of the Metropolitan Authority has had the effect of preventing all the neighbouring counties adopting the Order, and as London and the surrounding counties contain practically all the glanders in the Kingdom, there seemed little prospect of any abatement of the disease except by the private effort and at the cost of owners of horses. So long as the 1892 Order remains law and the local authorities decline to enforce it, so long must glanders prevail except where owners are able and willing to stamp it out at their own cost. No doubt this is their most economical course, but even horse-owners possess human nature, and the poorer and less conscientious of them will certainly do what they can to evade the loss and in some cases the ruin which must accompany private efforts at stamping out. They will treat all their milder cases, without reporting them, and when they have temporarily disguised all symptoms of disease will sell the animal suffering from latent glanders. Thus disease will be spread, at the same time that its prevalence will, according to official returns, show a decrease.

The London County Council quite appreciate the gravity of allowing glanders to prevail unchecked by legislation, but they desire to avoid the cost of compensation, and have therefore issued a series of regulations which the daily press correctly describes as "rigorous." These regulations we print on another page, and they will be seen to provide very stringent powers to the inspectors engaged in limiting the spread of glanders. They do not include compulsory slaughter and compensation, but they embrace all the other powers of the 1892 Order, and consequently attempt to do at the owner's expense all that the Board of Agriculture intended to be done at the cost of the ratepayer.

The harshness of this course lies in the fact that it differs entirely from the procedure applied to other diseases of stock. Cattle-plague, pleuro-pneumonia and foot-and-mouth disease were stamped out, not at the expence of the owner, but at the cost of the rates and taxes. Why the owner of cattle and sheep should be placed on a different footing to the owner of horses has never yet been shown. The existence of glanders in a stable is no more blamable than the existence of pleuro-pneumonia in a cow-shed. Poor men have been ruined by both diseases, and individual effort has always failed to eradicate either plague.

Nothing but compulsory-slaughter can stamp out glanders. It has been tried in the British Army and been found effective. It has, at the cost of a rich owner, been tried in private stables and success has followed. If all horse-owners were rich, and if all were honest and law-abiding, perhaps coercion without compensation might be effectual, but when men's living depends upon saving a horse, we may be perfectly certain that they will evade a harsh law, and so spread the disease.

Previous to the issuing of the 1892 Order the law insisted that all glandered horses should be killed, but it recognised that some cases of farcy were curable, and most of them capable of temporary alleviation and so only applied isolation to that form. This was fair to the owner. The new order very properly recognised that this was a dangerous distinction and whilst giving compensation for *all* cases it made glanders and farcy one disease. The consequence is that now every case of farcy is to be treated as glanders, and horses which are capable of rendering years of service to their owners are to be treated like those that are incurable and actively dangerous. To enforce slaughter without compensation in all these cases is a great hardship to the owner, and it is a proceeding never contemplated by the Board of Agriculture. The London County Council by their new regulations endeavour to reach this end, and they do so by enforcing the penal clauses of the Order which provide that refractory owners may have their business interfered with by police officers at the gates, and the total stoppage of the movement of healthy horses either in or out of the stables.

Such indirect method of enforcing compulsory slaughter is not calculated to enlist the sympathies and co-operation of horse-owners, and we very much fear the result will be the hiding away of disease, failure to notify its existence, and an increased spread from infected to healthy stables. Diseased horses will be sent out of London, and the returns will show a decrease in the metropolis with an increase in the surrounding counties—the last condition of the country will be worse than the first. Verily permissive legislation for the diseases of stock has not been a success.

CASES AND ARTICLES

RUPTURE OF STOMACH.

By John E. Miller, M.R.C.V.S., Keyingham.

On the 31st of January I was called to attend a cart mare. It had been all right at 6 o'clock in the morning, taken its usual feed, and went to work in a plough with its fellow horse. The feed consisted of chopped food with Indian corn. At 8 o'clock the animal showed symptoms of gripes, and I was called to attend.

The animal was uneasy, pawing with the fore feet and frequently wanting to lie down; the breathing was hurried and there was heaving at the flanks. Pulse quickened, ears warm, mucous membrane not much disturbed, and curling of the lip. The animal had not passed any dung. I proceeded with the following treatment. I gave the animal an ordinary colic drink, containing a solution of aloes; I called to see my patient an hour later when it seemed no better, so I then gave a dose of chloral hydrate. At noon she was no better and could not be kept on her feet from pain. She continued to roll about, the breathing was more quickened and heaving of flanks more pronounced, whilst membranes had become high coloured. I then took about two quarts of blood from her, after which she gave another roll and got up again, and standing with her legs apart commenced to perspire profusely—as if someone was turning water on her. Her countenance was anxious and she looked round to the side of her chest. After that she made several attempts to go down, but was afraid to do so. In about half an hour later she went down suddenly and died right out.

On *post-mortem* I found the stomach ruptured towards the pyloric orifice, some of the contents of the stomach among the bowels, and also the stomach partly loaded with undigested food. I came to the conclusion the animal had been over-fed, thus causing indigestion and over distension, and that the rupture was caused by mechanical violence due to falling and rolling.

ON VOMITION IN THE HORSE.

And its Production for Therapeutical Purposes.

By E. Wallis Hoare, F.R.C.V.S., Cork.

In *The Veterinary Record* of March 18th there appears an article on the above subject, with description of an instrument for the production of vomition in the horse, by Vet.-Capt. F. Smith,

While we must always welcome any new addition in veterinary therapeutics, we have at the same time to consider whether such addition will be of advantage in practice, and whether its use is founded on correct reasoning.

Now his instrument is intended to dilate the cardiac end of the stomach and so overcome the obstacle to vomition, by which act the stomach will be relieved by removal of its contents, and thus rupture of its walls will be prevented. But we have to consider that rupture of the stomach is usually due to impaction of that organ with indigestible food, and that its walls become distended, and as a result paralyzed. In some of these cases we see, on post-mortem examinations being made, the enormous amount of distention which may occur, and the contents of the stomach resemble what one graphic observer described as "a Christmas pudding after being boiled in a cloth."

Now it is reasonable to ask of what use could the production of vomition be in such cases? The walls of the organ are paralyzed, the contents dry and hard, probably had they lived long enough the result would have been rupture. But in using mechanical means to produce vomition would we not be increasing the risk of rupture, by inducing contractions of the walls of the stomach. Of course there are cases of impacted stomachs, where the contents are more fluid in character, and accompanied by a certain amount of tympanitis of the organ, where vomition occurs without rupture, and where that act does not in any way afford relief to the patient. Probably in such cases the continuance of the act of vomition might save the case, by removing the indigestible food and the gas.

We may ask, in such cases, as to what is the precise cause of death? We can generally arrive at a fairly correct diagnosis, by the symptoms of continued pawing of the fore feet, eructations of gas, partial sweats, tremors of the superfical muscles. Any medicines administered only increase the distress and are often returned through the nostrils, the pain may increase to great severity, vomition may occur, either to a small or great extent, and cerebral complications evidenced by pushing the forehead against the wall or manger, and a semi-comatose condition may occur. At the post-mortem we find impaction of the stomach, either hard and dry contents, or more fluid, seldom any gastritis, and we must attribute the cause of death to cerebral complications, in the absence of any signs of rupture.

Whether the act of vomition occurs before or after the rupture of the walls of the stomach is a point in which authorities are not agreed. If we agree as stated by some authorities, that structural change always precedes the occurrence of the lesion, and that impaction is the exciting cause, then it is reasonable to believe that the extreme attempts at vomition would be also exciting causes of the rupture. Of course we are aware that it has been experimentally proved that the contractions of the muscular walls of the stomach are of no importance in the mechanism of vomiting, still it has not yet been demonstrated that such contractions do not exist, and in the case of the horse, with the cardiac orifice closed, such contractions in attempts at vomition must be considerable.

In conclusion I may state that I have seen many cases which, from the symptoms preceding death would lead one to suppose that rupture of the stomach had occurred, and on post-mortem examinations being made, no rupture was found to exist.

THE PRODUCTION OF VOMITION IN THE HORSE.

Professor Smith gives as reasons that the horse does not vomit. 1. Mechanical obstruction at the cardia. 2. A lowly developed vomiting centre.

May I refer to one or two reasons given by Meade Smith (Physiology of the Domestic Animals, p. 335). "In the first place, in the horse the stomach is never in contact with abdominal muscles." "The portion of the æsophagus between the diaphragm and the stomach is longer than in carnivorous animals, and as the stomach cannot be supported by close contact with the diaphragm, the longitudinal fibres are unable to overcome the permanent contraction of the cardiac sphincter." "In carnivorous animals the æsophageal orifice is at the left extremity, far from the pylorus." In the horse, on the other hand, the æsophageal orifice is in the middle of the lesser curvature of the stomach, near to the pylorus, and the pylorus is large and nearly always patulous.

Meade Smith also refers to experiments in dog, showing that if stomach be replaced by a bladder vomition can still be produced; thus showing that the esentials to satisfactory vomition are: (1) The fixed diaphragm. (2) Contracting abdominal muscles. (3) Compression of the stomach by factors 1 and 2. These esentials must be necessarily absent in horse.

Now taking all these facts into consideration, it appears probable that production of vomition in the horse would be by no means desirable. It seems to me, indeed, that vomition in the horse causes rupture, and not the rupture vomition; as the stomach receives no support during the act in the horse.

VERAX.

A PECULIAR CASE.

By J. W. THOMAS.

Whilst in practice with Mr. E. C. Howard, M.R.C.V.S., Newbury, Berks. we were called on February 7th, to see a three year old cart colt, which was said to have a swelling on one side of the head and unable to feed. We arrived at the farm about 7 p.m. and found the animal with head as described by the messenger. The mouth was slightly open with the tongue protruding, and from which an awful odour, like that from a rotten tooth was noticed. The tongue, lips, right side of face and sub-maxillary glands were immensely hard and swollen; and stringy saliva was dribbling from the mouth. There was no evidence of pain on manipulation, and by no means could the mouth be opened either by the animal itself or by our own efforts; therefore an examination of the mouth was impossible.

The history of the case is as follows:—That nothing was noticed wrong with the colt until the day of our visit, having the night before cleared up its feed in the usual style. It was noticed to look dull and refuse food and that the head was swelling on the right side. Nothing was done by the owner in the way of treatment but to turn the colt out for an hour in a grass meadow, where it had been in the habit of going in the day-time and coming in at night, when it had a feed of oats, chaff, hay, etc. The pulse was rather quicker than normal, and temperature 103, but still the colt seemed lively enough and tried to suck up some gruel which was given to it in a pail.

Treatment:—We had the head well bathed with hot water in which a small quantity of creolin was mixed, so that the smell might be less offensive, and afterwards applied a stimulating liniment; and what part of the tongue and mouth we were able to get at we washed out and applied a weak solution of chlorate of potash. Having ordered this to be repeated two or three times through the night we left. The following morning, arriving at the farm at 8 a.m, we found the animal much worse, the head bigger, smell extremely offensive, and a discharge of a yellowish-grey matter from the mouth. The colt by this time was very dull, with the head hanging nearly to the ground, and a great noise was made during respiration owing, I suppose, to the swollen condition of the tongue, throat, and other parts of the head. The pulse was very feeble; and that part of the tongue which was hanging from the mouth was quite dead, and of a blue-black colour. Seeing no possible chance of recovery we advised the owner to destroy the animal, but it was rather a busy time, and he thinking that whilst there was life there was hope, the colt was not killed, but it died about 10 p.m. on the same night.

I made a careful post-mortem examination and found nothing to satisfy me as to the cause of the malady. The tongue, lips, gums, etc. were greatly inflamed, and in some places of a greenish-black colour, but no foreign body or definite seat of injury could be found, except a small round black spot on the under surface of the tongue which seemed to be surrounded by a great deal of inflammation,

I cannot understand how it is that the mouth should smell so in such a short time, and the only thing I can suggest as to the cause is a sting or bite from some poisonous animal. If any readers have heard of or seen a similar case, I should be pleased to hear of it through the medium of this paper.

COMPOUND COMMINUTED FRACTURE OF THE EXTERNAL METATARSAL OF A BITCH.

TETANIC COMPLICATIONS, RECOVERY.

On the 18th January, 1893, a smooth haired collie bitch, five years and a half old, was brought to the surgery suffering from an injury to the near hind leg produced by the wheel of a "lurry." An examination of the parts showed that the skin and adjacent tissues had been stripped from the muscles from the hock to the foot, the tegument being simply retained in position by a narrow band down

the back of the leg, on turning back the flap on either side, the muscular tissue, tendons and the crushed bone were exposed to view, as well as a portion of the second metatarsal, the whole of the lacerated surfaces were covered and impregnated with coal dust, etc, there was but little hœmorrhage.

I washed the parts as thoroughly as possible with warm water and then with a 2 per 1000 solution of corrosive sublimate, brought the external surfaces into apposition, after removing some small spiculæ of bone, with carbolised sutures ; I then covered the lower part of the limb with carbolised tow and kept this in position with a linen bandage which had been soaked in perchloride of mercury solution.

On the 20th I removed the bandage, etc, washed the parts with a 2 per 1000 solution of perchloride, again wrapped the injured limb in carbolised tow and applied a bandage as before. Advised tablespoonful each of castor oil and syrup of buckthorn.

On the 22nd I again dressed the leg, the whole of the skin of the front and sides of the limb from the hock to the foot came away leaving the muscular substance, pieces of the external metatarsal and a small piece (about the size of a pea) of the second metatarsal exposed. I washed the wound with warm water and then with perchloride solution and removed in all nine pieces of the damaged fibula, I then applied the carbolised tow smeared with vaseline and bandaged the parts as on previous occasions.

I dressed the wound again on the 23rd, 24th, 25th January, and on this last occasion removed a few more pieces of the fractured external metatarsal. My attention was then called to a peculiar appearance of the patient's eyes, the curuncula of the left eye seemed to have extended to the middle of the globe and was as it were fixed there, the animal I was told had fed all right and the great functions seemed normal, I ordered a full dose of castor oil to be given the same night. On the following day I was told that the bitch must have caught cold, or swallowed a bone, as she did not eat and seemed to have a difficulty in swallowing milk. I found the jaws were fast together and the tail was stiff, I dressed the wounded leg with corrosive sublimate solution, thoroughly dried it and then dusted the parts with iodoform and applied the carbolised tow and bandage as before, I gave belladona electuary for the tetanic symptoms and ordered milk and soup to be administered with a spoon.

This treatment was continued till the 13th February when the tetanic symptoms passed away. From this time until the 4th of March the wound was dressed with vaseline and Cade's oil, and enveloped in carbolised tow and a linen bandage, the patient taking its ordinary food and going about the house and yard as usual. On the 5th March the wound had decreased to the size of a half-crown piece, but owing to the propensity of the bitch to lick the parts I thought it advisible to strap the surface up on the 6th, since then the wound has quite healed and the subject has again put on the flesh which she lost during the period of the tetanic symptoms.

"Procedo."

PURPURA HÆMORRHAGICA.

By R. Voisin, Vety. Student, R.V. Coll., London.

The patient, a brown cart mare, was first seen January 25th, and presented the following symptoms:—Dullness, breathing quickly, hind limbs considerably swollen, swellings under abdomen and sternum. The swellings were circumscribed, hard, hot, and painful ; visible mucous membranes injected, petechial spots on Schneiderian mucous membrane. Temp. 102·8, pulse 40, resp. 26. The following medicine was ordered :—

℞	Pot. Chlor.	drs. iv.
	Sp. Æth. Nit.,	oz. i.
	Quin. Sulph.,	grs. xxx.
	Acid. Sulph. dil.,	q. s.
	Aquæ	Oii.

To be repeated twice daily.

Jan. 26th. Animal a little brighter, feeding fairly well. Temp. 101·4, pulse 40, resp. 16.

Jan. 27th. About the same. Temp. 101·8, pulse 36, resp. 8.

Jan. 28th. Animal considerably worse, dull, not feeding; near nostril and upper lip considerably swollen and painful, in addition to the swellings already mentioned. considerable swelling of both fore limbs, and breast; loss of power in off fore limb; the animal tripped when moved. Temp. 105, pulse 72, resp. 12.

The following medicine was prescribed :—

℞	Tinct. Nux. Vom.	drs. iv.
	Sp. Æth. Nit.	oz. i.
	Tinct. Fer. Perchlor	drs. ii.
	Quin. Sulph..	grs. xxx.
	Acid. Sulph dil.	q. s.
	Aquæ	Oii.

To be repeated three times daily.

Jan. 29th. Slight improvement. Swellings of nostril and lip slightly diminished. Other swellings about the same size. Temp. 103, pulse 66, resp. 30.

Jan. 30th. Animal looking brighter; swellings gone from nostril and lip; return of power to off fore limb.

Jan. 31st. Animal greatly improved; feeding well and looking bright. Temp. 101, pulse 48, resp. 20.

Feb. 1st. Still doing well. Swellings of limbs slightly diminished. Temp. 101, pulse 44, resp. 12.

Feb. 2nd. Animal worse again, very dull, not feeding; legs rather stiff. Temp. 105·8, pulse 68, resp. 12.

Feb. 3rd. Hind legs more swollen; breast less swollen; near nostril very much swollen. Animal very dull and not feeding. Temp. 105·2. pulse 68, resp. 12.

The first prescription was now ordered three times daily.

Feb. 4th. Animal greatly improved; Swelling of nostril quite gone down, other swellings diminished. Temp. 101·4, pulse 52, resp. 12.

The second prescription was again ordered. From

this date onwards the animal began to improve. The febrile symptoms disappeared entirely, and the swellings became less marked each day. In the course of a few days the animal was placed on tonics, and has done well ever since.

TRANSLATIONS.

ANATOMO-PHYSIOLOGICAL STUDY OF THE PRODUCT OF A MULE AND A HORSE.

By Messrs. Cornevin and Lesbre.

Trans. by Thos. J. Watt. Dollar, M.R.C.V.S.

In order to bring the above mentioned interesting subject before the readers of *The Record* at as early a moment as your space will admit I have endeavoured to give the facts as nearly as possible in the form of a summary of the article as it appears in French (Trans.)

History of the animal in question. On the 24th April, 1873, an Arab mule. nine years old, which had been served by a Barbary stallion on several occasions, gave birth to a female offspring which she suckled and that did well. Less than a month afterwards a speculator bought the mule, the stallion, and the product, which he afterwards re-sold to the Jardin d'Acclimatation in Paris. At the time of the sale she was again pregnant by the horse, and gave birth to a second female offspring on the 21st April, 1874. In a short time she was again fecundated, this time by an Egyptian ass, and dropped a mule product on the 24th June, 1875. Served again by the donkey she gave birth to a fourth offspring of the male sex, in 1878. Being again covered by the stallion already mentioned she aborted. She again gave birth to a hybrid of the male sex in 1881 after being served by the horse. From this period she ceased to produce, and at 17 years of age her sexual life was finished. This seemed to have no detrimental effect on her health as she still remained very well at the age of 29 years. (Communication de M. A. Geoffroy-Saint-Hilaire).

The five living products to which the mule gave birth developed normally and became useful animals. The two male products of the mule and the donkey resembled mules, though theoretically they were three-quarter bred asses. One of these served several mares at the Jardin d'Acclimatation without result.

The three descendants of the mule and the horse resembled one another and appeared in every respect like horses. The females were covered by horses and the male covered a mare, they each had an offspring, but those of the females did not live, that of the male with a "Tarbaise" mare developed normally.

One of the two females resulting from the connection of the mule and the Barbary horse, born 21st April, 1874, was bought by the Veterinary School of Lyons in 1890. She was kept at the farm belonging to the School for some time and then slaughtered, carefully dissected, and the skeleton is now in the collections of the Institution.

This animal named "Hippone" was 16 years old when we bought it, its height by the standard was 55 inches, its live weight was 682½lbs. Its coat was light grey, dappled on the rump and flea-bitten on the croup. On examination, she gave completely and exclusively the impression of a Barbary mare, there was nothing about her to make one think of the mule, and no one could have even suspected her origin. The ears were small, mobile, well carried, in a word exclusively "caballine." The mane, which was not very abundant, was formed of hairs about 15 inches long and hung on the right side. The tail was completely furnished with hair like a horse, the medium length of the hairs being 19 inches. The hoofs, slightly contracted at the heels were like those common to all oriental horses. The horn of the hind feet was white, and this is not seen either on the ass or mule. The orifice of the lachrymal duct, in Hippone, opened at the inferior commissure of the nostril, as in the horse, the canal however had two openings on the right side as is also occasionally seen in the horse. The voice was more like the neighing of the horse than the braying of the donkey.

The pulse beat 31 times per minute, the respirations 14. and the temperature 101°F.

Journal de Médecine Vétérinaire et de Zootechnie Fevrier 1893.

BROMIDE OF POTASSIUM IN CLYSTERS TO ARREST VOMITING IN A SMALL BITCH.

By A. Marini.

Trans. by Thos. J. Watt. Dollar, M.R.C.V.S.

The little bitch in question was pregnant and for some time had had continuous attacks of vomiting. A large number of medicinal agents had been administered, such as opiates, antispasmodics, cocaine, but without success, and as a last resource bromide of potassium was given by rectal enema.

The bitch received two grammes of bromide the first day, four grammes the second, eight grammes the third; the vomiting then entirely stopped. The bitch gave birth to two pups.—*Clinica Veterinaria, 30th Luglio (July)* 1892.

VETERINARY SOCIETIES.

ROYAL VETERINARY COLLEGE V.M.A.

The 177th ordinary meeting was held in the theatre of the College, on Wednesday, March 15th, at 6.30 p.m. Mr. R. Shepherd in the chair. There were also present Mr. Wild, President of the Association, and 25 members. The minutes of last meeting were taken as read. Mr. Keenan was proposed as a new member of the association

Mr. A. H. Stroud then read his Essay on Tetanus; at the close of which a good discussion took place, in which nearly all those present took part. On the motion of Mr. Walker, seconded by Mr. Dowell, a hearty vote of thanks was accorded the Essayist, and the usual vote of thanks to the chairman terminated the meeting.

E. E. Seldon, *Assist. Sec.*

ARMY VETERINARY DEPARTMENT.

The following appeared in *The Bombay Government Gazette* of February 2nd, 1893.

EDUCATIONAL DEPARTMENT,
Bombay Castle, 30th Jan., 1893.

No. 201.—His Excellency the Governor in Council has been pleased to nominate the following gentlemen to be Fellows of the University of Bombay :—

o o o o o

Vet.-Capt. J. Mills, M.R.C.V.S., and V. S. H. and A. Society Scotland.

o o o o o

By order of His Excellency the Right Honourable the Governor in Council,

W. LEE-WARNER,
Secretary to Government.

Capt. Mills also holds the position of University Examiner for the Diploma in Agriculture.

Extract from *The London Gazette*, dated 24th March, 1893.

YEOMANRY CAVALRY, Cheshire (Earl of Chester's). Vet.-Major J. Storrar resigns his commission; also is permitted to retain his rank, and to continue to wear the uniform of the corps on his retirement. Dated 25th March, 1893.

Robert Clowes Edwards, Gent., to be Vet.-Lieut. Dated 25th March, 1893.

EXTRACTS AND NOTES.

PROFESSOR VIRCHOW ON THE EVOLUTION OF PATHOLOGY.

The Croonian Lectures was delivered by Professor Virchow before the Royal Society on March 16th. It took the form of a masterly review of the medical theories of the past, up to the time when the lecturer formulated his celebrated cellular pathology. We have attempted to give an abstract of the lecture, but are obliged to recognise that the condensation spoils its charm.

"The downfall of the old medicine, the so-called humoral pathology, was brought about in the beginning of the sixteenth century. We, in Germany, are inclined to attribute to our nation a decisive *rôle* in this memorable struggle.

It was a man of our race, Andreas Vesalius, from Wesel, who transformed anatomy into an exact science, and who thus, at one stroke, created for medicine a solid foundation, which it has retained ever since, and, let us hope, will never again lose.

But the principal blow to the old medicine was struck by his somewhat elder contemporary Paracelsus, that charlatan yet gifted physician who removed from among the beliefs of mankind the doctrine of the four humores which, quasi-chemical in its construction, formed the basis of the old pathology. Strangely enough, he accomplished this with weapons borrowed form the armoury of the Arabs, the successors of the Greeks, and the chief representatives of the mediæval humoral pathology. From them, also, he borrowed alchemy, and at the same time the fantastic spiritualism of the East, which found a clear expression in his doctrine of the "archæus," as the determining force in all living beings.

In this way the new medicine, at its very birth, absorbed the germs of that ruinous contradiction, which, even up to this present century, has kept up the embittered strife of the schools.

To Vesalius is due the exact tendency which starts from the observation of actual conditions, and which, without going further, we may call the anatomical.

Paracelsus, who pronounced the anatomy of the dead body to be useless, and sought for the basis of life as the highest goal of knowledge, demanded "contemplation" before all else; and, just as he himself arrived in this way at the meta-physical construction of the "archæi," so he unchained among his followers a wild and absolutely fruitless mysticism.

Nevertheless there lay hidden in that "contemplation" of his a healthy kernel, which would not allow the intellectual activity which it had stirred up to come to rest. It was the idea of *life* which formed the ultimate problem for all future research. Strangely enough, this idea, which always existed in the popular mind, and which is in an unmistakable form present even amongst primitive nations, had been driven far into the background in scholastic medicine. Ever since the time of Hippocrates it had been the custom to use, instead of life, the obscure expression *natura*; but in vain does one seek for a more exact definition of the term. To Paracelsus Nature was living, and the basis of his life was that very "archæus," a force differing from matter," and separable from it, or, as he himself expressed it, in the sense of the Arabs, a spirit, "spiritus." In the compound organism of man, the mikrokosmos, each part, according to him, had its own "archæus." but the whole was ruled by the "archæus maximus," the "spiritus rector." From this premiss has proceeded the long succession of vitalistic schools, which, in ever-changing forms, and with ever new nomenclature, introduced into the notions of physicians this idea of a fundamental principle of life.

This summary exposition of mine has greatly anticipated the historical progress of the evolution of medicine. It is now time to pay proper homage to the great investigator who made a more exact method the ruling one, and at the same time to award to his country, which brought him forth, its important share in determining the new direction of our science.

Nearly 100 years had passed since Vesalius and Paracelsus had begun their work when William Harvey published his "Exercitatio anatomica de motu cordis et sanguinis in animalibus." Here, for the first time, the anatomical examination of living parts was carried through, in an exemplary way, according to experimental methods. All the objections that anatomy concerned itself with dead parts only were thus at once set aside; living action became the object of immediate observation, and this was done on one of the most important organs, one absolutely necessary to life, the varying activity of which constantly calls for the attention of the practical physician. Not only so, however, but a new mode of observation—the experimental method—was thus brought into use for research; a method through which a new branch of medical science, physiology, has been laboriously built up.

The influence of this one wonderful discovery of Harvey's on the ideas of men of his time and of his successors was memorable. Among the men of his time, the last support of Galenism disappeared with the proof of circulation; among his successors the comprehension of the causation of local processes dawned for the first time. Very ancient and highly difficult problems, such as inflammation, could now be attacked; a goodly piece of

life also became intelligible, since one of the vital organs themselves could now be subjected to experiment, and, to the astonishment of all, the action of this organ showed itself to be an absolutely mechanical one. The revulsion of thought was so complete, that it has become since a difficulty hardly to be overcome to enter even in imagination into the ideas of the older physicians, to whom the circulation of the blood was unknown.

Nevertheless, in spite of such striking results, the craving of man for more complete understanding remained unsatisfied. One saw the action of the living heart, but how did it live? What was this life, the action of which one saw before one? In the heart itself the essence of life could not be recognised.

Harvey turned his attention to another object; he tried to observe the very beginnings of life in the incubated egg of the fowl and in the embryos of mammalian animals. He thereby soon arrived at the question of the significance of the egg in general, and enunciated the celebrated dictum, "Omne vivum ex ovo." Owing to the more extensive researches of modern investigators, this dictum, as is well-known, proved too narrow for the whole animal kingdom, and is no longer exact when applied to plant life. Its validity for the higher animals, on the other hand, cannot be questioned, and it has formed one of the firm standpoints on which researches on sexuality and on the propagation of life have been based. But Harvey, on account of the deficiency of his optical instruments, was unable to see that which he was labouring to discover, namely, the process of organisation as such, just as he had been unable in former times to see the continuity of the capillary flow. This imperfection lasted for a long time afterwards; and thus it happened that even Albrecht von Haller and John Hunter considered the formation of the area vasculosa in the incubated egg of the fowl as the commencement of organisation and, indeed, as the type of organisation itself.

I will return to this point later on; but for the present I should like first to draw your attention to a man whose importance for the further development of the doctrine of life has always appeared to me to have been uncommonly great and highly significant, but who, nevertheless, has sunk into unmerited oblivion, not only among posterity in general, but also, I think I may be allowed to say, even in the memory of his countrymen. I mean Francis Glisson, who was a contemporary of Harvey, and whose works appeared almost simultaneously with those of his more celebrated colleague; but the brilliancy of Harvey's discoveries was so great that the light which shone from Glisson's work-table almost disappeared. I rejoice that on so joyful an occasion I may recall the memory of the modest investigator, and may offer him the tribute of gratitude which science has to award him.

When, thirty-five years ago, I published my little essay on "Irritation and Irritability" I did not know much more about Glisson than what every student of medicine learns, namely, that there is in the liver a "capsula communis Glissonii," and, what was even less known, that this anatomist had written a small work on "Rachitis," which, indeed, was the first of its kind. In my own paper on this disease I had tried to demonstrate the circumspection and accuracy which are noticeable in this book, and which make it a typical model for all collective investigations; but even at that time I overlooked the fact that this was only the smallest merit of this wonderful man. It was only in the further course of my studies on the history of the doctrine of irritation and irritability that I made the discovery, that the idea of irritability did not originate with Haller, but that he had borrowed the idea from Glisson. Glisson thought he might attribute to the active principle ("principium energeticum") which according to him is contained in all matter, the three faculties of living matter which he considered as fundamental, namely, the facultas perceptiva, appetitiva, et motiva. All matter was sensitive, was thus stimulated to develop impulses, and moved itself as a consequence of these impulses.

It was not the "principium energeticum" set up by Glisson, which stimulated his successors again to take up the thread of his observations, but rather the process of irritation described by him, and the fundamental faculties of living matter on which it depended.

Glisson was convinced that nerves contracted when irritated. He joined to this the idea that, through the contraction of the nerves, or even of the brain, the fluid contained in them was propelled towards the periphery.

This notion, shared by Willis and many other physicians of that time, furnishes the reason why irritability was identified with contractility.

This dispute about the irritability of muscles has continued far into the present century; its long duration becomes intelligible only when we bear in mind that, without the most exact knowledge of its historical development, even the very statement of the question is liable to be misunderstood.

As a matter of iact, so far as we know, the nerves are not contractile, like the muscles; on the other hand, the muscles are not only contractile, but are also irritable. Irritability and contractility are not identical, even when they occur in the same part. The nerve current, on the other hand, cannot be compared with the blood stream; it does not consist in the movement of a fluid, but is of electrical nature, and hence there is no need for its production of a contraction of the nerve tubes.

It was also an erroneous conclusion that every irritated part contracted. Instead of contraction, secretion, or, under certain circumstances, a more vigorous nutrition may occur as the final result of irritation. Hence we use a more comprehensive term in order to express this final result, and call all forms of it "actions." While Glisson defined all "actio propria sic dicta" as "motus "activus," we distinguish different kinds according to the nature of the effects, or, expressed otherwise, according to the direction of the activity (nutrition, formation, and function); but we agree with the above thinker in the opinion that no vital energy is ever set free without stimulus; that, therefore, every action is of an irritative nature. In this irritation, according to my idea, consists the "principium dividendi," according to which we must distinguish between active and passive processes of life, and in this way we gain also a basis for the fundamental division of pathological elementary processes. How much work has been necessary in order to render this conception possible.

The unitarian efforts of the following period relentlessly passed over the tendency of which I have just spoken. Some returned to the old Mosaic dictum, "the life of the body is in his blood;" others gave the nervous system, and the brain especially, the first place in their consideration. Thus once more was renewed the old struggle, which for thousands of years had divided the schools of medicine into humoral and solidar pathology.

In England, humoral pathology found a strong support in the great and legitimate authority of John Hunter. Although this distinguished practitioner never shared the one-sidedness of the later pathologists, but rather attributed to the solid parts the living principle the existence of which he assumed, nevertheless, in his investigations, the blood took precedence over all other parts as the chief vehicle of life.

One must, however, recall to mind that Hunter laid special stress on the fact that life and organisation are not bound to each other, since animal substances which

are not organised can possess life. He started, as has already been noticed, from the erroneous conception that eggs are not organised, and that it was not till after incubation that the first act of organisation—namely, the formation of vessels—took place. He considered his "diffuse matter"—"materia vitæ diffusa"—as the actual carrier of life; and this was to be met with not only in the solid parts, but in the blood also. This matter, according to him, existed in the brain in a remarkable degree of concentration, but its presence was quite independent of all nervous structures, as is shown by the example of the lower animals which possess no nerves. In the posthumous writings of Hunter, which Owen has collected, the very striking expression "simple life" is met with, a state most clearly to be recognised in plants and the lowest animals. This simple life was, in Hunter's view, the ultimate source of all living actions, pathological as well as physiological.

Hunter was out and out a vitalist, but his materialistic vitalism, so to speak, differed *toto cælo* from the dynamic vitalism of the German schools. If living matter existed independently of all organisation, such living matter was beyond the scope of anatomical investigation; but, on the other hand, if it were present in non-organised parts, such as an egg, it was in itself the ultimate source of the organisation which subsequently makes its appearance in these parts. It must, therefore, to adopt a later mode of expression, be of a plastic nature. Here Hunter's notion fell in with that of the plastic lymph, as developed by Hewson, and it was only logical that Schultzenstein applied it to the blood at last, and designated as "plasma" the material of life present in the blood. In this way the formative and nutritive matter necessary to physiological life as well as the plastic exudations occurring in diseased conditions, could be attributed to the same material—a highly satisfactory result in appearance, and one providing a most convenient basis for interpretations. The exponents of this notion had no scruples in going one step further, and in providing this material of life with a technical name. They called it "fibrin." Evidently this did not quite correspond with Hunter's ideas, for we know of no such matter, either in the egg, or in the plants, or the lower animals, as that to which he attributed simple life; but the necessities of pathology overcame all such scruples, and the plastic exudations were received as undoubted evidence that fibrin possessed the power of becoming organised.

Wherever fibrin failed, blastemata were brought to the fore. Ever since Schwann had given the name of cytoblastema to the organising material of the egg, the way had been opened for assuming, in other places, the existence of material with this ambiguous name.

Even when, finally, protoplasma was recognised as cell contents, and thus the one requisite of Hunter, namely, that the material of life must also be contained in the individual parts, appeared to be fulfilled, yet no single specific material was thereby arrived at. No one dreamed of regarding protoplasm as fibrin, and least of all did anyone consider it a simple chemical body.

By the conception of the blastema, however, there had been reawakened a thought which had occupied the minds of man from the earliest times. If a plastic matter capable of being organised really existed in the body, then the organisation of the same must present the first reliable example of epigenesis. The problem of the "generatio æquivoca," which had been fought over for so long a time, now appeared to be solved. What Harvey had taught concerning the descent from the egg was rejected concerning the descent from exudation. Several generations of young medical men have been educated in this belief. I myself remember my "epigenetic" youth, with no little regret, and I have had hard work to force my way through to the recognition of the sober truth.

Meanwhile, the attention of other bodies of inquirers had been directed to the tissues of the body. Among these, in view of their importance, the nervous tissues, and especially the mass of nervous tissues in the brain and spinal cord, rank highest.

Hunter also had acknowledged the importance of the brain, and hence called it the "materia vitæ coacervata." It was easily seen that it contained no fibrin, but experimental research showed also that neither the brain nor the spinal cord was of the same value throughout all its parts. The more accurate the experiments, the smaller became the region which, in the strictest sense, is the vital part, until Flourens limited it to one single spot, the knot of life ("nœud vital"). Was the unity of life found in this way? By no means. The brain is no more and no less vital than the heart; for life is present in the egg long before the brain and heart are formed, and all plants, together with an immense number of animals, possess neither the one nor the other. In the highly compound organism of man, the brain and spinal cord have a certain determining action on other parts necessary to life. Their disturbance may immediately be followed by the disturbance of other vital organs, and sudden death may ensue.

But the collective death of a compound animal no more implies the local death of all its special parts than the local death of some of the latter is incompatible with the collective life of the animal. As has been well said, at the death of a compound organism there is a "primum moriens," one part which first ceases to live; then follow, at long intervals sometimes, the other organs, one after the other, up to the "ultimum moriens." Hours and days may pass between the total death and the local death of the parts. The fewer nerves a part contains, the more slowly usually does it die; I therefore consider the process of dying in the compound organism as the best illustration of the individual life of the several constituent parts, which is in its turn the first axiom necessary for the study and for the understanding of life.

The way in which pathology has tried to approach the desired goal, to fathom the living substance in its diseased conditions, has led us a great step forward. Pathological anatomy, especially, has opened this road. The more numerous its observations, and the more it penetrated into the details of the lesions, the smaller became the field of so-called general diseases. The first steps of mediæval anatomists had the effect of drawing the attention to local diseases. In the first and longest period, which one may define as that of Regionism, the pathological anatomists sought the cause of disease in one of the larger regions or cavities of the body—in the head, chest, or abdomen. In the second period, ushered in by the immortal work of Morgagni, shortly before the time of which I last spoke—the time of Brown and Hunter,—they endeavoured to find in a certain region the actual organ which might be considered as the seat of disease. On this foundation arose the Parisian school of Organicism, which, until late in this century, held a dominant position in pathology. In this school, already, they recognised that not the organ, nor even a portion of it, could be the ultimate object of research. Xavier Bichat divided the organs into tissues, and showed that in the same organ sometimes one and sometimes another tissue might be the seat of disease.

From that time forward the eye of the pathological anatomist was directed chiefly to the changes in the tissues, but it soon became apparent that even the tissue are not simple substances. Since the third decade of this century, the microscope has disclosed the existence of cells, first in plants, and very soon afterwards in animals. Only living beings contain cells, and vegetable

and animal cells show so much similarity of structure that one can demonstrate in them the actual product of organisation. This conviction has become general, since through our embryologists, especially through Schwann, proof has been afforded that the construction of embryonic tissues was derived from cells, also, in the highest animals and in man himself.

In the fourth decade of this century the science of pathological anatomy had already begun to be directed towards cells. These researches very soon struck on great difficulties. Many tissues, even in their developed state, appeared to contain neither cells nor their equivalents; nevertheless, I have been able to demonstrate their existence in those tissues in which their presence appeared to be most doubtful—namely, in bone and connective tissue. At the present time we are so far advanced as to be able to say that every living tissue contains cellular elements. We go a step further even, for we require that that tissue alone should be called living in which the constant occurrence of cells can be shown.

A still greater difficulty then appeared—namely, to discover in what way new cells originated. The answer to this question had been very heavily prejudiced by the so-called cell theory of Schwann. Inasmuch as this very trustworthy investigator asserted that new cells originated from unformed matter, from "cytoblastema," there was opened up a wide road to the old doctrine of the "generatio æquivoca," which afforded all partisans of plastic materials an easy way of reviving their dogma. The discovery of cells of connective and allied tissues gave me the first possibility of finding a cellular matrix for many new growths. One observation followed another, and I was soon in a position to give utterance to the dictum, "Omnis cellular e cellula."

And so at last the great gap was closed which Harvey's ovistic theory had left in the history of new growth, or, to speak more generally, in the history of animal organisation. The begetting of a new cell from a previous cell supplements the reproduction of one individual from another, of the child from the mother. The law of the continuity of animal development is therefore identical with the law of heredity, and this I was now able to apply to the whole field of pathological new information. I blocked for ever the last loophole of the opponents, the doctrine of the specific cells of pathology, by showing that even diseased life produced no cells for which types and ancestors were not forthcoming in normal life.

These are the fundamental principles of cellular pathology. In proportion as they have become more certain, and lastly of more general value, they have also secured for themselves great importance in physiology. The cell is not only the seat and vehicle of disease, but also the seat and carrier of individual life; in it resides the "vita propria." It possesses the property of irritability, and the changes in its substance, provided these do not destroy life, produce local disease.

Disease presupposes life; should the cell die, its disease also comes to an end. Certainly, as a consequence, the neighbouring and even far distant cells may become diseased, but as regards the cell itself, the susceptibility to disease is extinguished with life.

Since the cellular constitution of plants and animals has been proved, and since cells have become recognised as the essentially living elements, the new science of biology has sprung up. It has not brought us the solution of the ultimate riddle of life, but it has provided concrete material, anatomical objects for investigation, the properties, the actions, and the passions of which we can analyse. It has put an end to the wild confusion of fantastic and arbitrary notions such as I have just mentioned; it has placed in a strong light the immeasurable importance of anatomy, even in the most delicate conditions of the body, and, lastly, it has made us aware of the close similarity of life in the highest and lowest organisms, and has thus afforded us invaluable means for comparative investigation

Pathology has also its place, and one certainly not without honour, in this science of biology, for to pathology we are indebted for the knowledge that the opposition between healthy and diseased life is not to be sought in a fundamental difference of the two lives, not in an alteration of the essence, but only in an alteration of the conditions.

Pathology has been released from the anomalous and isolated position which it had occupied for thousands of years. By applying its revelations not only to diseases of man but also to those of animals, even the smallest and lowest, and to those of plants, it in the best manner helps to strengthen biological knowledge, and to narrow still more that region of the unknown which still surrounds the intimate structure of living matter. It is no longer merely applied physiology; it has become physiology itself.

Nothing has more contributed thereto than the constant scientific union which has endured for more than 300 years between English and German investigators, and to which we to-day add yet another link. May this union never be broken!

YEW POISONING.

To determine the causes of the capricious occurrence of yew poisoning in cattle Mr. Stuart Wortley undertook some experiments and published his results in *The Times* in the course of last summer. His letter was followed by a conflict of evidence from various quarters, the general bearing, however, showing a widespread belief amongst agriculturists in the frequent toxic influence of the yew. Little good could be expected to result from the discussion of such a question in a daily paper, hence it is satisfactory to find that the matter has been revived in a quarter which is more likely to yield material based upon accurate observation and research. The journal of the Royal Agricultural Society contains papers by four writers, each of whom discusses the subject from a different point of view. Mr. E. P. Squarey gives from his own experience a list of the most striking instances of deaths of animals after eating the foliage of yew trees. His examples include the Irish yew, or Florence Court yew, (taxus fastigiata), and the English yew (taxus baccata), and they show also that the nature of the soil upon which the plant grows appears to have no influence in promoting toxic effects. Mr. Charles Whitehead, after noting the small amount of definite information in English works, gives a summary of a recent French publication by M. C. Cornevin, professor at the National Veterinary School. This writer is of opinion that yew does not act as an irritant, but as an anæsthetic and narcotic at first, and later on by stopping the action of the heart and by affecting the respiratory system. Judging by analogy, he thinks it acts upon the nerve centres. In view of the rapidity of action, M. Cornevin makes the very ingenious suggestion that there may be a chemical combination within the animal organism analogous, perhaps, to that which produces prussic acid in certain species of amygdalus. The third paper is

from Mr. William Carruthers, F.R.S.: he gives a reference to a description of toxic symptoms in man; he states, as a matter of common knowledge, that children eat the fleshy part of the fruit with impunity, but that when the thin crust surrounding the seed is broken, and the seed itself crushed and swallowed, fatal results have ensued. On the other hand, he doubts whether there is any foundation in fact for the asserted differences in toxic qualities in the stem or foliage of the two sexes of the yew. In the fourth paper, by Mr. J M. H. Munro, chemical questions are mainly dealt with. The methods of separating the specific alkaloid *taxine* are given in detail, and it is suggested that chemical changes in it may have been produced in the processes of extraction employed by Amato and Caparelli. While admitting that *taxine* is probably the poison of the yew it is considered doubtful whether it has ever been obtained in a pure state and also probable that other alkaloids are present. In Mr. Munro's experiments he obtained a greater quantity of crude alkaloid from the male leaves than from the female; but he does not regard this result as conclusive, and he suspects that the successive stages of purification cause an actual alteration in composition. The whole question, therefore, of the precise conditions under which yew is poisonous to horses, cattle, sheep, and "game" still remains unsolved, though its importance merits, and will doubtless receive, the closest investigation.—*The Lancet.*

PARASITIC ORIGIN OF CANCER.

Two sittings of the Pathological Society have, says *The Lancet*, been occupied with an interesting discussion on a paper by Mr. Jackson Clarke dealing with the parasitic origin of maligant cancer and sarcomatous diseases. In recent years the evidence on this point has been gradually growing stronger and stronger, and the attention of pathologists has been more and more drawn to the consideration of certain forms of organisms that have been described as present in cancer. Scheuerlen first ascribed the symptoms of irritation to the presence of a bacillus —a bacillus which we now know is frequently met with in the skin and probably plays little part as an active etiological factor in the production of cancer; then more recently it has been supposed (1) that budding fungi, (2) that psorosperms, or some similar parasite, might play a part in setting up the necessary process of irritation in cancer. Now, however, we find an observer coming forward to state that in both cancer and sarcoma an enormous number of spore-bearing organisms and free spores may be demonstrated in every specimen in these malignant growths. He maintains that they are not mere dividing protozoa, but that they are more or less closely related to the spore-bearing psorosperms. Such a contention naturally met with very considerable opposition, as its acceptance is almost equal to postulating that a large proportion of such tumours, hitherto recognised as being degenerated cells, giant cells and invading leucocytes, must be looked upon as being parasitic psorosperms, in various stages of development. Whatever the immediate outcome of the discussion may be, it can ultimately lead to nothing but good, as it will necessarily draw attention of a considerable number of histologists to an aspect of the pathology of malignant disease which, though studied by individual observers, has not yet been generally considered.

REGULATIONS OF THE LONDON COUNTY COUNCIL AS TO GLANDERS OR FARCY.

(Order of 1892.)

In pursuance of Articles 12, 13 and 23 of the Glanders or Farcy Order of 1892, the London County Council, being the Local authority for the County of London hereby makes the following regulations:—

1. These Regulations shall take effect and be in force on and after the 1st day of April, 1893.

As to Movement of Diseased or Suspected Animals.

2. A diseased animal shall not be moved from the stall, standing or other place where it may be when first known to be diseased, except under the charge and direction of one of the Council's inspectors, and then only for isolation or slaughter.

3. A diseased animal shall not be moved out of any stable, building, or other place, except for slaughter, and then only in pursuance of a license granted by one of the Council's inspectors, and in an enclosed vehicle provided by the Council.

4. A diseased animal shall be conspicuously marked by or under the direction of one of the Council's inspectors with the word "glandered" and with a number, and it shall be unlawful for any person to remove or in any way obliterate such mark.

5. A suspected animal shall not be moved from any stall, standing, stable, building or other place, except for isolation or slaughter, and then only under the charge and direction of one of the Council's inspectors or in pursuance of a license granted by him.

6. A suspected animal shall be conspicuously marked by or under the direction of one of the Council's inspectors with the words "suspected of glanders," and with a number, and it shall be unlawful for any person to remove or in any way obliterate such mark.

7. An animal which has been in the same stable, building, field, or other place in which glanders or farcy exists, or otherwise in contact with any diseased or suspected animal, or which has been otherwise exposed to the infection of glanders or farcy, shall not be moved out of any stable, building, field, or other place during the time any diseased animal remains in such stable, building, field or other place; nor until the regulations of the Council as to cleansing and disinfection have been complied with by the owners, lessee, or the occupier thereof.

8. Fodder, litter or any other thing that has been in contact with, or used for or about any diseased or suspected animal, shall not be taken out of any stable, building, field or other place until it has been disinfected to the satisfaction of one of the Council's inspectors, and until a license for the removal thereof has been granted by the Council pursuant to Article 18 of the Glanders or Farcy Order of 1892.

As to Cleansing or Disinfection.

9. Every place in which a diseased or suspected animal has been kept, shall immediately after the removal of such animal or the carcase thereof, be swept out, and all litter, dung or other thing that has been in contact

with or used about any such animal shall be disinfected by being thoroughly mixed with quicklime.

10. Every part of such place, and every manger, feeding trough, and other thing used for or about any diseased or suspected animal, or with which such animal or its droppings, or any discharge from the mouth or nostrils thereof may have come in contact, shall be as far as practicable thoroughly washed with water, and scrubbed or scoured, and shall also be disinfected by being thoroughly washed with hot water containing at least one pint of carbolic acid to each gallon of water.

11. Every place in which a diseased or suspected animal has been kept, shall within 48 hours of the time when such place has been cleansed and disinfected as provided in regulations 9 and 10, be washed over with limewash made immediately before use of freshly burnt lime and water, and containing in each gallon of limewash at least four ounces of chloride of lime or half a pint of carbolic acid.

12. The cleansing and disinfection of places, utensils, and other things shall be executed by and at the expense of the owner, lessee, or occupier of the premises.

13. A vehicle in which a diseased or suspected animal or carcase has been conveyed shall immediately after use be cleansed and disinfected in the following manner—

(*a*) The interior of such vehicle shall be effectually cleansed by the application of steam to all parts thereof.

(*b*) The interior of such vehicle shall then be thoroughly washed with water containing at least one pint of carbolic acid in every gallon.

As to the Removal and Destruction of Carcases.

14. The carcase of a diseased animal shall not be moved except under a license granted by one of the Council's inspectors, and in accordance with the conditions of such license.

15. Every part of the carcase of every diseased animal shall be destroyed, by exposure to a high temperature, under the supervision of an officer appointed by the Council.

16. Throughout these regulations "animal" means a horse, ass, or mule; "glanders" includes farcy; "diseased" means diseased with glanders or farcy; "suspected animal" means any animal declared by one of the Council's Veterinary Inspectors to be suspected of glanders; "Council" means the London County Council. All other words have the same meaning as in the Glanders or Farcy Order of 1892.

17. All regulations relative to glanders or farcy made by the Local Authority of the County of London, and hitherto in force therein, are hereby revoked.

Any person guilty of an offence against the foregoing Regulations is liable to a penalty of twenty pounds.

A police-constable will be placed at the entrance or entrances of any premises during the time any animal affected with glanders or farcy is kept therein, and such premises will be placarded in accordance with the provisions of Article 11 of the Glanders or Farcy Order of 1892; but these precautions will be unnecessary when the owners authorise the immediate slaughter of the diseased animal.

NEW TOOTH SHEARS.

I have much pleasure in bringing before the profession my new tooth shears.

The advantages to be derived from using them are:—They do away with any liability of fracturing the jaw or starting the fang of the tooth, from the equal pressure brought to bear on the posterior as well as the anterior aspect of the tooth in the act of cutting it. The animal suffers none, and no after treatment of the tooth is required as a rule, as the cut is generally a clean one.

Messrs. Arnold and Son, London, are the makers, and will supply purchasers with particulars how to use them

James M. Crawford, M.R.C.V.S.

PROSECUTION UNDER THE VETERINARY SURGEONS ACT.

At Marylebone Police Court, before Mr. Plowden, on the 25th March, 1893, G. S. Palmer, of Loudon Mews, Loudoun Road, N.W., was summoned at the instance of the Royal College of Veterinary Surgeons for displaying the words "Veterinary Shoeing Forge" outside his premises.

Mr. Thatcher conducted the prosecution on behalf of the College, and after reading the 17th section of the Act said that the defendant displayed the words "Veterinary Shoeing Forge" outside his establishment, and that according to the case of the R.C.V.S. v. Robinson that constituted an offence within the meaning of the section.

Mr. Plowden remarked that the two cases seemed quite similar. Mr. Thatcher said they were on all fours, and that the College had done everything in its power to give as much publicity to the decision as possible, and that no prosecutions were instituted without a cautionary notice being first sent to the offender, and a fair time allowed for him to comply with it.

The usual formal evidence was then put in that the defendant was not on the Register and that the proceedings were authorised by the Council.

Mr. Wedlake gave evidence bearing out the opening statement, and in cross-examination denied that the

words could only be seen by somebody who went on purpose to look for them, but on the contrary they could be distinctly seen at a considerable distance.

The defendant admitted that he had received the notice from the College and said he had endeavoured to comply with it by having a coat of paint put over the word "Veterinary."

Mr. Plowden said that he had better go back and put three coats over it, and if he came there again he should deal severely with him. He found him guilty of the present offence and fined him 20s. and costs.

A "CRUELTY" PROSECUTION DEFEATED.

A case was heard at Stockport County Police Court yesterday which attracted considerable attention in view of the fact that a society has recently been formed in the borough for the "protection of horse-owners," on account of the character of many of the prosecutions instituted by the Royal Society for the Prevention of Cruelty to Animals. In the case referred to Henry Jolly and Ambrose Jolly ware summoned in respect of the working of a horse at Cheadle Hulme, on February 6th.—The evidence of a police officer was to the effect that a pair of horses were drawing two tons of coal on the date named. The shaft horse had a deformed foot, and was very lame, being quite unfit for work.—Charles Thompson, an inspector of the Royal Society, said he examined the horse on the 11th and found it suffering from sidebone. The animal was unfit for road work.—A farmer was called for the defence, and said the horse was not lame.

Mr. T. J. Watt Dollar, Veterinary Surgeon, Stockport, said he had examined the horse, and found it had two deformities, but neither caused the animal pain.

By Inspector Thompson: He had not seen the horse on the 6th, but was certain there had been no inflammatory action for a long time.—The Bench dismissed the case.—*The Manchester Guardian.*

Anthrax.

A somewhat curious recurrence of anthrax is engaging the attention of the authorities at Chester-le-Street. Rather less than two years since a gentleman lost a valuable mare pony and a pair of heifers from the disease; a year later three cattle grazing in the same field died from anthrax; and now within the last few days a filly, who was at the foot of the mare pony referred to when she died, became sick, and died in the same field. Mr. William Temple, M.R.C.V.S., certified the cause of death as anthrax, and the field has been declared an infected place. The cause of the recurrence at such almost regular intervals in the same field is being diligently searched for, but up to the present time without success.—*Durham Advertiser.*

There has been another death from anthrax this week at Bromley Hall Farm, near Eccleshall, and investigation by the police has shown that five cattle on the farm have either died from anthrax or been killed in consequence of being attacked by the disease during the month. A cow has also died from anthrax this week on Hartwell Hall Farm, near Stone. This is the farm where there has been from time to time a recrudescence of the disease over a series of years, the origin of it being attributed to the use of foreign bone manure which harboured malignant germs. Upwards of twenty head of cattle and forty fowls have perished on this farm alone from anthrax. It is remarkable that this latest case has occurred in an animal which was pastured in the field which was dressed with the bone manure to which the original mischief was attributed.—*Birmingham Post.*

Lead poisoning in Cows.

At Uckfield recently, two heifers died from licking disused paint. They were grazing on Piltdown Common, where some person had thrown a lot of tins and jars, among them being a jar containing some old paint. The animals no doubt attracted by the smell of the oil, licked the paint, and very shortly afterwards became ill. Mr. T. Crowhurst, V.S., Framfield, pronounced them to be suffering from lead poisoning, and a search on the Common revealed the cause. The heifers died in great agony. Mr. Crowhurst states that he has had several cases of the same kind lately.—*Sussex News.*

Foot-and-Mouth Disease in Germany.

The Inland Cattle Market, which was lately re-opened, has been once more closed owing to a further outbreak of foot-and mouth disease detected among swine brought to Berlin.—*Reuter.*

Veterinary Science.

BUXTON.—On Saturday afternoon Mr. T. Drinkwater, M.R.C.V.S., Whaley Bridge, delivered the first of a series of six weekly lectures on "The structure of the horse's foot, and the scientific facts connected with shoeing," in the Town Hall.—*Buxton Herald.*

EARLSTON.—The third lecture of the course was given by Prof. Dewar in the Church Hall on Friday evening. It was devoted to skin diseases, including surfeit or nettle-rash, erythema, eczema, grease, elephantiasis; parasitic skin diseases, lice, mange, scab, ringworm, etc. The treatment of wounds, bruises, sprains, lockjaw, etc., was also considered.—*Southern Reporter, Selkirk.*

HITCHIN.—The second of the series of five technical education lectures by Professor J. Wortley Axe on the care of live stock was given at the Town Hall, Hitchin, on Tuesday evening, the subject being "The feeding and management of horses." Last week Professor Axe explained the digestive organs and the process of digestion, and he now applied the principles he then set forth.—*Hertfordshire Express.*

BURRELTON.—Mr. Peddie made "Pleuro-pneumonia and Anthrax" the subject of his lecture last week, giving a succinct account of these hard pests, and affording an opportunity of examining the bacilli of anthrax through a microscope.—*Perthshire Advertiser.*

CORRESPONDENCE.

THE CENTRAL V.M.S.—AN OMISSION.

SIR,

The announcement of Professor McFadyean's nomination for Fellowship of the Central Veterinary Medical Society did not appear in the report of the Society's last meeting. As I was absent from this meeting I depended upon the reporter's manuscript, or on receiving the usual nomination form. Strangely enough the former failed to note the nomination, and the latter appears to have been lost, as it was not returned to me with the books, papers, etc. —Yours truly,

H. G. ROGERS, Hon. Sec.
170 Brompton Road, S.W.

March 26th, 1893.

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—(Mar. 24) Vety.-Capt. Mills, Messrs. E. W. Hoare, E. E. Seldon, G. H. Gibbings, "Verax," "The Englishman" (Calcutta), "The Scotsman," Gt. Yarmouth.

(Mar. 30) Capt. F. Smith, Messrs. G. Thatcher, T. H. Merrick, E. Wallis Hoare, H. Nixon, "The Leicester Daily Post."